

Appl. No. : 10/813,811  
Filed : March 30, 2004

## AMENDMENTS TO THE CLAIMS

**Please amend Claims 1-9, 11, 14-16 and 21-22 as follows.**

**Please add new Claims 23-27 as follows.**

1. (Currently amended) A method of transmitting a digital signal, comprising:  
quantizing a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by ~~an~~ embedded quantization;  
transmitting at least one of the at least first and second bit-streams; and  
generating a dequantized digital signal from at least parts of one of the transmitted at least first and second bit streams;  
wherein ~~if in the generation of the dequantized digital signal generating comprises combining the parts of the at least first and second bit-streams are combined, the combined dequantized signal is~~being generated by ~~an embedded dequantization in which having~~ at least two quantization levels and ~~having at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval~~ which is ~~finer~~shorter than quantization intervals for dequantizing any of the at least first and second bit-streams.
2. (Currently amended) The method of Claim 1, wherein each quantization level has a quantization rate and the at least one bit-stream ~~generated by an embedded quantization is~~ generated by ~~an~~ embedded quantization where at least two quantization intervals at a same lower quantization rate are split into a different number of quantization intervals at a same higher quantization rate.
3. (Currently amended) The method of Claim 2, wherein the at least one bit-stream ~~generated by an embedded quantization is~~ generated by a non-uniform embedded quantization.
4. (Currently amended) The method of Claim 3, wherein the at least one bit-stream ~~generated by a non-uniform embedded quantization is~~ generated by a non-uniform embedded dead zone quantization.
5. (Currently amended) The method of Claim 4, wherein the at least one bit-stream ~~generated by a non-uniform embedded dead-zone quantization is~~ generated by a non-uniform embedded double dead zone quantization.
6. (Currently amended) The method of Claim 1, wherein the at least one bit-stream

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~~generated by an embedded quantization~~ is generated by a uniform embedded quantization.

7. (Currently amended) The method of Claim 6, wherein the at least one bit-stream ~~generated by a uniform embedded quantization~~ is generated by a uniform embedded dead zone quantization.

8. (Currently amended) The method of Claim 7, wherein the at least one bit-stream ~~generated by a uniform embedded dead zone quantization~~ is generated by a uniform embedded double dead zone quantization.

9. (Currently amended) The method of Claim 1, wherein each bit-stream is generated by ~~an embedded~~ quantization.

10. (Original) The method of Claim 1, further comprising selecting end points of quantization intervals of a quantizer such that at least one of the end points does not coincide with end points of a quantization interval of another quantizer.

11. (Currently amended) The method of Claim 1, wherein the embedded quantization comprises at least three quantization levels, ~~preferably more than seven levels, and still more preferred more than ten levels.~~

12. (Original) The method of Claim 1, wherein the quantizing of the source digital signal comprises embedded successive approximation quantization at every quantization level.

13. (Original) The method of Claim 1, further comprising controlling redundancy for each quantization level.

14. (Currently amended) A device for transmitting a digital signal, comprising:  
a quantizering means for configured to quantizeing a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by ~~an embedded~~ quantization; and

a transmittering means for configured to transmitting at least one of the at least first and second bit-streams, the quantizering means being configured such that when a dequantized digital signal is generated from at least parts of one of the transmitted at least first and second bit-streams, ~~if in the generation of the dequantized digital signal the parts of the at least first and second bit-streams are combined, the combined dequantized signal isbeing generated by an embedded dequantization~~ er in which having-at least two quantization levels and having-at least one quantization interval, at each quantization level, are provided, wherein the at least one quantization interval ~~which is finershorter~~ than quantization intervals for dequantizing any of the

at least first and second bit-streams.

15. (Currently amended) A device for receiving a digital signal, comprising:  
~~a receiver~~means for configured to receiveing at least a first and a second bit-stream; and  
~~a dequantizer~~means for configured to generateing a dequantized digital signal from the received first and second bit-streams, wherein the dequantizer~~means comprising combining means for~~ is further configured to combineing, in the generation of the dequantized digital signal, the at least first and second bit-streams, the combined dequantized signal being generated by an embedded dequantizationer in which ~~having~~ at least two quantization levels and ~~having~~ at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval~~which is finer~~shorter than quantization intervals for dequantizing any of the at least first and second bit-streams.

16. (Currently amended) Two or more signals generated by a method of transmitting a digital signal, wherein the method comprises:

quantizing a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by an embedded quantization;

transmitting at least one of the at least first and second bit-streams; and

generating a dequantized digital signal from at least parts of one of the transmitted at least first and second bit streams;

~~wherein if in the generation of the dequantized digital signal~~ the generating comprises combining the parts of the at least first and second bit-streams~~are combined~~, the combined dequantized signal ~~is being generated by an embedded dequantization~~er in which ~~having~~ at least two quantization levels and ~~having~~ at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval~~which is finer~~shorter than quantization intervals for dequantizing any of the at least first and second bit-streams.

17. (Original) The device of Claim 14, wherein the device is integrated in a node of a telecommunications network.

18. (Original) The device of Claim 15, wherein the device is integrated in a node of a telecommunications network.

19. (Original) The device of Claim 14, wherein the device is integrated in a telecommunications network.

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20. (Original) The device of Claim 15, wherein the device is integrated in a telecommunications network.

21. (Currently amended) A computer readable medium for storing executable codes, wherein the executable codes are configured to transmit a digital signal and wherein the medium comprises:

a code configured to quantize a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by an embedded quantization;

a code configured to transmit at least one of the at least first and second bit-streams; and

a code configured to generate a dequantized digital signal from at least parts of one of the transmitted at least first and second bit streams,

wherein ~~if in the generation of the dequantized digital signal the~~ parts of the at least first and second bit-streams are combined, the combined dequantized signal is being generated by an embedded dequantization~~er having in which~~ at least two quantization levels and ~~having~~ at least one quantization interval, at each quantization level, which and wherein the at least one quantization interval is finer ~~shorter~~ than quantization intervals for dequantizing any of the at least first and second bit-streams.

22. (Currently amended) A method of receiving a digital signal, comprising:

receiving at least a first and a second bit-stream; and

generating a dequantized digital signal from the received first and second bit-streams, the ~~dequantizing means comprising combining means for combining, in the generation of the dequantized digital signal, wherein~~ the at least first and second bit-streams are combined, the combined dequantized signal being generated by an embedded dequantization~~er having in which~~ at least two quantization levels and ~~having~~ at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval which is finer ~~shorter~~ than quantization intervals for dequantizing any of the at least first and second bit-streams.

23. (New) The method of Claim 1, wherein the embedded quantization comprises at least seven quantization levels.

24. (New) The method of Claim 1, wherein the embedded quantization comprises at least ten quantization levels.

25. (New) A device for receiving a digital signal, comprising:

means for receiving at least a first and a second bit-stream; and

means for generating a dequantized digital signal from the received first and second bit-streams, wherein the generating means is configured to combine at least first and second bit-streams, the combined dequantized signal being generated by embedded dequantization in which at least two quantization levels and at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval is shorter than quantization intervals for dequantizing any of the at least first and second bit-streams.

26. (New) A device for receiving a digital signal, comprising:

an I/O interface configured to receive at least a first and a second bit-stream;

a memory which stores a program, wherein the program is configured to generate a dequantized digital signal from the received first and second bit-streams, wherein the at least first and second bit-streams are combined, the combined dequantized signal being generated by embedded dequantization in which at least two quantization levels and at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval is shorter than quantization intervals for dequantizing any of the at least first and second bit-streams; and

a microprocessor configured to execute the program stored in the memory.

27. (New) A device for receiving a digital signal, comprising:

an I/O interface configured to receive at least a first and a second bit-stream; and

a dequantizer module configured to generate a dequantized digital signal from the received first and second bit-streams, wherein the dequantizer module is further configured to combine at least first and second bit-streams, the combined dequantized signal being generated by embedded dequantization in which at least two quantization levels and at least one quantization interval, at each quantization level, are provided, and wherein the at least one quantization interval is shorter than quantization intervals for dequantizing any of the at least first and second bit-streams.